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WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

November 15, 2010

TO: Internal File

FROM: April A. Abate, Environmental Scientist II aaa 11-15-2010

THRU: James D. Smith, Permit Supervisor JDS 15 Nov 2010

SUBJECT: 2010 1st Quarter Water Monitoring: Bear Canyon Mine, C/015/0025, Task ID # 3469

The monitoring plan is described on pages 7-48 through 7-60A of the MRP. It includes Tables 7-12 through 7-17. The mine is currently in the process of transitioning to new management. Subsequently, Norwest Corporation – a consulting firm located in Salt Lake City, Utah has taken over the water sampling program.

1. Were data submitted for all of the MRP required sites?

In-mine YES ☒ NO ☐

A total of four in-mine samples are listed in the Bear Canyon water monitoring plan: SBC-9A, 16-8-8-10, UG-1 and UG-2. Samples UG-1 and UG-2, which represent inflow to Mine #4, do not have any specified sampling protocol in the operational water monitoring plan. Furthermore, UG-1 was last sampled in May 2009 and UG-2 was last sampled in February 2008.

SBC-9A was sampled during the 1st quarter for operational parameters and was the only sample location required for 1st quarter sampling.

Springs YES ☒ NO ☐

Most of the spring samples in and around the Bear Canyon mine are sampled for field, or either operational or baseline parameters. During the 1st quarter, five springs are monitored during the month of February only: SBC-3, SBC-4, SBC-5, SBC-14, and SBC-17. Spring sample SBC-17 was the only inaccessible spring due to frozen water.

Streams YES ☒ NO ☐

Stream sampling required for the 1st quarter of each year is performed for operational parameters during the month of February only. Stream samples required for operational parameters during the month of February include: BC-1, BC-2, BC-3, BC-4, CK-1, and CK-2.

Only one stream samples were accessible during the first quarter for sampling: BC-2.

UPDES YES ☐ NO ☒

Five stations are monitored for the Bear Canyon UPDES permit on a monthly basis. None of these stations reported any monthly flow data from the five stations during the 1st quarter of 2010. The exception was discharge point UTG040006-004 - Mine Water to Bear Canyon Creek, which was reported as flowing during the 1st quarter of 2010.

Wells YES ☐ NO ☐

Not Applicable. Four wells are monitored for depth to water measurements only from May through October. None of the four wells were required to be monitored during the 1st quarter of 2010 as required in the current water monitoring plan (Table 7-14).

2. Were all required parameters reported for each site?

In-mine YES ☒ NO ☐

Springs YES ☒ NO ☐

Streams YES ☒ NO ☐

UPDES YES ☒ NO ☐

3. Were any irregularities found in the data?

In-mine YES ☒ NO ☐

pH during the month of February 2010 was reported as 9.5. Prior to that, the October reading was reported as 8.2. The alkalinity of this mine water discharge should continue to be monitored.

Springs YES ☒ NO ☐

A groundwater sample that comes from SBC-3, which is listed as the Right Fork Creek Well has shown considerably high levels of chloride, sulfate, TDS and hardness in the samples collected from it. By contrast other spring samples average readings considerably lower for the same water quality parameters. Although this is somewhat of an apples and oranges comparison because this water is from a well and all other data are from springs, it is still worth further investigation.

Streams	YES ☐	NO ☒
UPDES	YES ☐	NO ☒
Wells	YES ☐	NO ☐

Not Applicable this quarter.

4. On what date does the MRP require a five-year resampling of baseline water data.

Baseline parameters are to be taken in August of year 5 prior to each permit renewal (Table 7.14). The next permit renewal date is November 02, 2010; therefore, the baseline analyses should have been collected in August 2010.

5. Based on your review, what further actions, if any, do you recommend?

- Sample BC-3 at the Lower Right Fork of Bear Creek has shown a recent increase in the levels of Total Dissolved Solids (TDS) since May 2008. This indicates that excess sediment may be discharging into the creek. The operator should evaluate sediment controls in this area and determine if there is any mitigation needed to control the level of sediment entering the water body. The location of stream sample BC-3 is an important one due to the fact that it is located adjacent to the main road. A high likelihood of this area receiving sediment from the disturbed area exists. Therefore, the Division recommends that Permittee modify the water monitoring plan to sample this location for operational parameters whenever flow is present. Currently, the water monitoring plan only requires the location be sampled for operational parameters during the months of February, August, and October.

- SBC-3, which is listed as the Right Fork Creek Well has shown considerably high levels of chloride, sulfate, TDS and hardness in the samples collected from it. By contrast other spring samples average readings considerably lower for the same water quality parameters. Although this is somewhat of an apples and oranges comparison because this water is from a well and all other data are from springs, it is still worth further investigation.

- Sample SBC-9A: a pH reading during the month of February 2010 was reported as 9.5. Prior to that, the October reading was reported as 8.2. The alkalinity of this mine water discharge should continue to be monitored.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES ☐ NO ☒

7. Follow-up from last quarter, if necessary.

See Bullet #1

8. Did the Mine Operator submit all the missing and/or irregular data?

YES ☒ NO ☐

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